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IN THE CLAIMS

Kindly enter the following amended claims.

1. (2x Amended) An isolated nucleic acid sequence comprising:
   a) the sequence represented in Figure 8 (SEQ ID NO:1-SEQ ID NO:4); or
   b) the sequence represented in Figure 2 (SEQ ID NO:5, SEQ ID NO:68 and SEQ ID NO:69); or
   c) a sequence obtained from a sequence defined in a) or b) by substitution, deletion or addition of one or more nucleotides with the proviso that said sequence still codes for said protease.

2. (Amended) An isolated nucleic acid sequence that is complementary to a nucleic acid sequence according to claim 1.

3. (Amended) A recombinant vector comprising in its structure a nucleotide sequence according to claim 1, under the control of regulatory elements, and involved in the expression of calpain activity in a LGMD2 disease.

4. (2x Amended) An isolated nucleic acid sequence encoding the amino acid sequence represented in Figure 2 (SEQ ID NO:6).

5. (Amended) An isolated amino acid sequence which is encoded by a nucleic acid sequence according to Claim 1, characterized in that it is a calcium dependent protease enzyme belonging to the calpain family, involved in the etiology of LGMD2.

6. (3x Amended) An isolated amino acid sequence according to claim 5 characterized in that either it contains the sequence such as represented in Figure 2 (SEQ ID NO:6), or the amino acid sequence of Figure 2 (SEQ ID NO:6) modified by deletion, insertion and/or replacement of one or more amino acids with the proviso that such amino acid sequence has the calpain activity involved in LGMD2 disease.

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7. (Amended) An isolated amino acid sequence according to claim 5, characterized in that LGMD2 is LGMD2A.

8. (Amended) A host cell unable to express a calpain enzyme activity, characterized in that it is transformed or transfected with a nucleic acid sequence comprising the isolated nucleic acid sequence according to Claim 1.

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12. (Amended) A method of screening, such method comprising the steps of:

- providing an isolated amino acid sequence according to Claim 5 and
- determining ligands of said amino acid sequence, said ligands being selected from the group consisting of substrate(s), co-factors and regulatory components.

13. (Amended) A method of screening, such method comprising the steps of:

- providing an isolated nucleic acid sequence according to Claim 1 and
- determining components which regulate expression of the novel calpain large subunit 1 (nCL1) gene.

14. (Amended) A method of screening, such method comprising the steps of:

- providing an host cell according to claim 8 and
- determining components which regulate expression of the novel calpain large subunit 1 (nCL1) gene.

15. (2x Amended) A method for detecting an LGMD2 disease, such method comprising the steps of:

- selecting nucleotide sequences from one or more exons or flanking sequences of said one or more exons from an nCL1 gene,

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- selecting primers specific for said one or more exons, or said flanking sequences, of said one or more exons,

- amplifying nucleic acid sequences of said one or more exons or said flanking sequences of one or more exons with said selected primers, and

- comparing the amplified sequence to the corresponding sequence obtained from Figure 2 (SEQ ID NO:5, SEQ ID NO:68 and SEQ ID NO:69) or Figure 8 (SEQ ID NO:1-SEQ ID NO:4) wherein a mutation in said amplified sequences is indicative of an LGMD2 disease.

16. (2x Amended) The method according to claim 15, characterized in that the primers are those selected from the group consisting of:

a) those described in Table 1 (SEQ ID NO:10-SEQ ID NO:17);
b) those described in Table 3 (SEQ ID NO:18-SEQ ID NO:67);
c) those including the introns-exons junctions of Table 2 (SEQ ID NO:71-SEQ ID NO:116); and
d) those derived from the primers in a), b), or c).

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18. (2x Amended) A kit for the detection of a predisposition to LGMD2 by nucleic acid amplification characterized in that it comprises primers selected from the group consisting of:

a) those described in Table 1 (SEQ ID NO:10-SEQ ID NO:17);
b) those described in Table 3 (SEQ ID NO:18-SEQ ID NO:67);
c) those including the introns-exons junctions of Table 2 (SEQ ID NO:71-SEQ ID NO:116); and
d) those derived from the primers in a), b), or c).

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20. (2x Amended) A pharmaceutical composition for the treatment of an LGMD2 disease characterized in that it contains a component selected from the group consisting of:

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a) an isolated nucleic acid sequence according to claim 1,

b) a host cell according to claim 8, and

c) an isolated amino acid sequence according to claim 5.

22. (Amended) A method of screening a compound for its ability to modify the expression of the novel calpain large subunit 1 (nCL1) gene comprising contacting said compound with a host cell according to claim 8 and determining whether said compound modifies expression of said nCL1 gene in said host cell.

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IN THE ABSTRACT

Kindly enter the attached Abstract of the Disclosure.

IN THE SEQUENCE LISTING

Kindly enter the attached paper and computer readable forms of the Sequence Listing in lieu of the Sequence Listing submitted on August 30, 2001.